WHAT IS CLAIMED IS:

1. A vibration element for a vibration wave driving apparatus, comprising:

a first elastic member and a second elastic member; and

an electro-mechanical energy conversion element that is disposed between the first elastic member and the second elastic member,

wherein the vibration element has vibrations with a plurality of vibration modes which are different in relative ratio between displacements of respective ends of the vibration element.

2. A vibration element according to claim 1, further comprising:

a third elastic member which is disposed between the first elastic member and the electro-mechanical energy conversion element, extends in a direction orthogonal to an axial direction of the vibration element, and has a larger outer diameter than that of the electro-mechanical energy conversion element.

3. A vibration element for a vibration wave driving apparatus, comprising:

a first elastic member and a second elastic member;

an electro-mechanical energy conversion element

that is disposed between the first elastic member and the second elastic member; and

a third elastic member that is disposed between the first elastic member and the electro-mechanical energy conversion element, extends in a direction orthogonal to an axial direction of the vibration element, and has a larger outer diameter than that of the electro-mechanical energy conversion element,

wherein the vibration element has two portions which are different in dynamic stiffness, the two portions being arranged in the axial direction with the third elastic member taken as a boundary therebetween.

4. A vibration element according to claim 2, wherein the first elastic member has a portion with a smaller outer diameter than that of the second elastic member.

5. A vibration element according to claim 3, wherein the first elastic member has a portion with a smaller outer diameter than that of the second elastic member.

6. A vibration element according to claim 2, wherein the second elastic member is formed of a material with higher stiffness than that of the first elastic member.

7. A vibration element according to claim 3, wherein the second elastic member is formed of a material with higher stiffness than that of the first elastic member.

8. A vibration wave driving apparatus, comprising:

a vibration element including an electro-mechanical energy conversion element that is disposed between a first elastic member and a second elastic member; and

a rotor that is brought into contact with a frictional surface of the vibration element,

wherein the vibration element has vibrations with a plurality of vibration modes which are different in relative ratio between displacements of respective ends of the vibration element.

9. A vibration wave driving apparatus according to claim 8, wherein the vibration element includes a third elastic member that is disposed between the first elastic member and the electro-mechanical energy conversion element, extends in a direction orthogonal to an axial direction of the vibration element, has a larger outer diameter than that of the electro-mechanical energy conversion element, and is provided with the frictional surface.

10. A vibration wave driving apparatus, comprising:

a vibration element including an electro-mechanical energy conversion element and a third elastic member that are disposed between a first elastic member and a second elastic member, the third elastic member extending in a direction orthogonal to an axial direction of the vibration element and having a larger outer diameter than that of the electro-mechanical energy conversion element; and

a rotor that is brought into contact with a frictional surface of the third elastic member,

wherein the vibration element has two portions which are different in dynamic stiffness, the two portions being arranged in the axial direction with the third elastic member taken as a boundary therebetween.

11. A vibration wave driving apparatus according to claim 10, wherein the vibration element has a portion located on a side of the frictional surface and a portion located on a side on which the frictional surface is not provided, with the third elastic member taken as a boundary therebetween, and the portion located on the side of the frictional surface has lower dynamic stiffness than that of the portion located on the side on which the frictional surface is not provided.

12. A vibration wave driving apparatus according to claim 9, wherein the first elastic member is disposed on a side of the frictional surface of the third elastic member, the second elastic member is disposed on a side of the third elastic member on which the frictional surface is not provided, and the first elastic member has a portion with a smaller outer diameter than that of the second elastic member.

13. A vibration wave driving apparatus according to claim 11, wherein the first elastic member is disposed on a side of the frictional surface of the third elastic member, the second elastic member is disposed on a side of the third elastic member on which the frictional surface is not provided, and the first elastic member has a portion with a smaller outer diameter than that of the second elastic member.

14. A vibration wave driving apparatus according to claim 9, wherein the first elastic member is disposed on a side of the frictional surface of the third elastic member, the second elastic member is disposed on a side of the third elastic member on which the frictional surface is not provided, and the second elastic member is formed of a material having higher stiffness than that of the first elastic member.

15. A vibration wave driving apparatus according to claim 11, wherein the first elastic member is disposed on a side of the frictional surface of the third elastic member, the second elastic member is disposed on a side of the third elastic member on which the frictional surface is not provided, and the second elastic member is formed of a material having higher stiffness than that of the first elastic member.

16. A vibration wave driving apparatus according to claim 9, wherein the frictional surface of the third elastic member is provided on an outer side with respect to an outer periphery of the electro-mechanical energy conversion element.

17. A vibration wave driving apparatus according to claim 10, wherein the frictional surface of the third elastic member is provided on an outer side with respect to an outer periphery of the electro-mechanical energy conversion element.

18. A vibration wave driving apparatus according to claim 8, wherein at least one end portion in the axial direction of the vibration element has an increased outer diameter.

19. A vibration wave driving apparatus according

to claim 10, wherein at least one end portion of the vibration element in the axial direction has an increased outer diameter.

20. A vibration wave driving apparatus according to claim 9, wherein the first elastic member and the third elastic member are formed integrally.

21. A vibration wave driving apparatus according to claim 10, wherein the first elastic member and the third elastic member are formed integrally.

22. A vibration wave driving apparatus according to claim 9, wherein the third elastic member is formed of a material having abrasion resistance.

23. A vibration wave driving apparatus according to claim 10, wherein the third elastic member is formed of a material having abrasion resistance.

24. A vibration wave driving apparatus according to claim 9, wherein the frictional surface of the third elastic member is provided with a member having abrasion resistance.

25. A vibration wave driving apparatus according to claim 10, wherein the frictional surface of the

third elastic member is provided with a member having abrasion resistance.

26. A vibration wave driving apparatus according to claim 9, wherein the third elastic member has grooves for augmenting vibration displacement formed on its both surfaces, respectively, arranged in the axial direction of the vibration element.

27. A vibration wave driving apparatus according to claim 10, wherein the third elastic member has grooves for augmenting vibration displacement formed on its both surfaces, respectively, arranged in the axial direction of the vibration element.

28. A vibration wave driving apparatus according to claim 8, further comprising:

a driving circuit for selecting a driving signal for exciting one of the plurality of vibration modes and applying it to the electro-mechanical energy conversion element.

29. A vibration wave driving apparatus according to claim 8, further comprising:

a driving circuit for applying a driving signal to the electro-mechanical energy conversion element, the driving signal producing a vibration mode which causes

a less distortion of the electro-mechanical energy conversion element, and is selected from the plurality of vibration modes.

30. A vibration wave driving apparatus, comprising:

a vibration element including an electro-mechanical energy conversion element and a third elastic member which are disposed between a first elastic member and a second elastic member, the third elastic member extending in a direction orthogonal to an axial direction of the vibration element and having a larger outer diameter than that of the electro-mechanical energy conversion element; and

a rotor that is brought into contact with a frictional surface of the third elastic member,

wherein the third elastic member has grooves for augmenting vibration displacement formed on its both surfaces, respectively, arranged in the axial direction of the vibration element.

31. A vibration wave driving apparatus according to claim 30, wherein the grooves are provided on an inner periphery side with respect to the frictional surface of the third elastic member.

32. A vibration wave driving apparatus according

to claim 30, wherein shapes of the both surfaces of the third elastic member in the axial direction of the vibration element are asymmetrical to each other.